UNITED STATES PATENT AND TRADEMARK OFFICE

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>29 January 2004</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-36</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) <u>19-25</u> is/are allowed.

6)☒ Claim(s) <u>1-8, 18 and 26-30</u> is/are rejected.

7)☒ Claim(s) <u>9-17 and 31-36</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>06/09/2005.</u>

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   **Claims 1-2, 4, 6, 8, 18, and 26-30 are rejected under 35 U.S.C. 103(a) as being**

unpatentable over Slutsman *et al* (U.S. 6421442 B2) in view of Maupin *et al* (U.S. 5953663

A) in further view of Ashdown *et al* (U.S. 6625273 B1).

As to **claim 1**, Slutsman teaches a method for improving call processing in a number

portability environment (column 1, lines 15-16). Slutsman also teaches being processed a called

party B was served by end office 160 of local service provider 2 and has been ported by the end

office 150 of local service provider 3 (column 5, lines 56-58). Slutsman also teaches the calling

party A, being serviced by its local service provider can call the (ported) called party B with LRN

response information being available to the end office of the LSP 1 (column 5, lines 64-67),

reading on claimed "a method for relating a directory number to a station in a network for an

incoming call from a calling party using a calling party device to a called party using the station,

wherein the directory number is associated with a first switching center and service to the

station is associated with a second switching center."

Slutsman also teaches a cache, reading on claimed "local number portability storage

device," is associated with the switching office which is responsible for launching queries to a

number portability database (column 4, lines 9-11). Slutsman also teaches the end office 110

receives the number and detects that 212-984 is a portable NPA-NXX and The end office also

checks cache 100 to determine whether it contains location routing number response

information corresponding to the dialed number (column 6, lines 2-3, lines 7-10), reading on

claimed "querying a local number portability data storage device for stored routing information

associated with the directory number." Slutsman also teaches the end office may not detect any

valid information in the cache relating to the dialed number: the term "valid information" is used

to indicate that information within the cache may be deemed to be unreliable after some

specified period of time (column 6, lines 35-40), reading on claimed "and time information

associated with a time when a previous number portability query associated with the directory

number returned the stored routing information."

Slutsman also teaches a cache memory is provided in association with the end office

100 and is checked to determine if call routing can be done before receiving the LRN response

information from the NP database (column 6, lines 24-27), reading on claimed "receiving a

return result from the local number portability data storage device and determining if the return

result from the local number portability data storage device includes the stored routing

information."

Slutsman also teaches even if response information exists in the cache for a particular

called number, those entries may have been in the cache for such a period of time that

statistically they are no longer reliable and are therefore treated as invalid pieces of information

(column 6, lines 39-43), reading on claimed "determining if the stored routing information is

expired by determining if the time information associated with the stored routing information

exceeds a first predetermined threshold."

Slutsman also teaches the cache does include the LRN response information including

the LRN of 212-484-9999 (column 6, lines 10-11). Stutsman also teaches the end office then

routes the call via tandem switch 120 to the end office 150 of LSP 3 identified by the LRN from

the cache and the LSP 3 end office then recognizes its own LRN in the CdPN parameter,

obtains the dialed number from the generic address parameter, and completes the call to station

B (column 6, lines 17-22), reading on claimed "if the return results from the local number

portability data storage device includes the stored routing information and if the stored routing

information is not expired, forwarding the incoming call and the stored routing information to the

second switching center, wherein the stored routing information associates the directory number

with the second switching center."

However, Slutsman fails to teach the station is a *mobile station*, the network is a *wireless*

network, the first switching center is a *mobile switching center*, and the second switching center

is a *mobile switching center*. The Examiner contends this feature was old and well known in the

art at the time of invention as taught by Maupin.

In an analogous art, Maupin teaches a telecommunications network relating to the

rerouting of incoming calls to a ported telecommunications terminal within a telecommunications

network (column 1, lines 16-18). Maupin also teaches where a mobile station 120 associated

with a first home location register (HLR) 130 within a first Public Land Mobile Network (PLMN)

140 is shown relocating or porting to a second HLR 150 within a second PLMN 160 (inter-PLMN

number portability 170) (column 4, lines 49-53). Maupin also teaches calling party subscriber

terminal 30 (e.g., wireline subscriber terminal and mobile station) requests a call connection

towards the called party mobile station 120 that has been ported from the donor HLR 130 to the

gaining HLR 150 (column 8, lines 17-20). Maupin also teaches the received incoming call

connection is routed to the donor GMSC 180 associated with the donor HLR 130 (signal and

call connection 210) (column 8, lines 26-28). Maupin also teaches the donor GMSC 180, in turn,

determines that the mobile station associated with the received MSISDN number has been

ported (column 8, lines 33-35). Maupin also teaches the donor HLR 130 then determines that

the MSISDN number is no longer registered and returns a signal 310 informing the donor

GMSC 180 that no routing instruction is available and that the mobile station 120 has been

ported (column 8, lines 41-45). Maupin also teaches the N-1 switch 100 reroutes the call

connection to the gaining GMSC 200 utilizing the received network address as the new CdPn

(column 8, lines 62-64). Maupin also teaches the gaining GMSC 200 determines the gaining

HLR currently serving the ported mobile station 120 by further analyzing the received network

address (column 9, lines 1-4). Maupin also teaches the gaining HLR 150 then forwards the

received roaming number to the gaining GMSC 200 via signal 330 and utilizing the received

roaming number as the destination address, the gaining GMSC 200 reroutes the received

incoming call connection to the serving MSC 340 (column 9, lines 15-21), all of the above

reading on claimed "the station is a *mobile station*, the network is a *wireless network*, the first

switching center is a *mobile switching center*, and the second switching center is a *mobile

switching center.*"

Therefore, it would have been obvious to one of ordinary skill in the art at the time of

invention to require the method, the first switching center, the second switching center, and the

station, all taught by Slutsman, the station is a *mobile station*, the network is a *wireless network*,

the first switching center is a *mobile switching center*, and the second switching center is a

mobile switching center, as taught by Maupin, in order to reduce the number of queries

performed to the centralized database to reroute incoming signals to the current PLMN or PSTN

serving a ported telecommunications terminal.

Slutsman also teaches entries may have been in the cache for such a period of time that

statistically they are no longer reliable and are therefore treated as invalid pieces of information

(column 6, lines 41-43). However, neither Slutsman nor Maupin teach the time information is

associated with a *date* and time. The Examiner contends this feature was old and well known in the art at the time of invention as taught by Ashdown.

In an analogous art, Ashdown teaches a system and method for intelligently caching Local Number Portability queries from a Public Switched Telephone Network (PSTN) (column 3, lines 50-52). Ashdown also teaches a Local Number Portability Cache (LNPC) system. The LNPC 160 resides within the ICP 170, which is installed between the service provider SSP 130 and the network 100 (column 4, lines 34-37). Ashdown also teaches each entry stored in the local database 406 has an associated time stamp and the time stamp is continually examined against a pre-defined expiration period (column 7, lines 13-15), reading on claimed "the time information is associated with a *date and time.*"

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the method, the first switching center, the second switching center, and the station, all taught by Slutsman, the station is a *mobile station*, the network is a *wireless network*, the first switching center is a *mobile switching center*, and the second switching center is a *mobile switching center*, as taught by Maupin, the time information is associated with a *date and time*, as taught by Ashdown, in order to minimized the number of number portability queries in a telecommunications system.

As to **claim 2**, Slutsman, Maupin, and Ashdown teach everything as applied in claim 1 and Slutsman further teaches:

f) if the stored routing information is expired, querying an external number portability database for current routing information associated with the directory number (column 6, lines 45-48);

g) receiving a return result from the external number portability database (column 6, lines 48-49);

h) determining if the return result from the external number portability database includes the current routing information (column 6, lines 50-55);

i) if the return result from the external number portability database includes the current routing information, forwarding the incoming call and the current routing information to the second switching center, wherein the current routing information associates the directory number with the second switching center (column 6, lines 56-58);

j) storing the current routing information and time information when the associated number portability query was performed in the local number portability data storage device in relation to the directory number (column 6, lines 62-64).

However, Slutsman fails to teach the second switching center is a *mobile* switching center. The Examiner contends this feature was old and well known in the art at the time of invention as taught by Maupin.

Maupin also teaches the second switching center is a *mobile* switching center (column 8, lines 62-64).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the method, taught by Slutsman, Maupin, and Ashdown, f) if the stored routing information is expired, querying an external number portability database for current routing information associated with the directory number; g) receiving a return result from the external number portability database; h) determining if the return result from the external number portability database includes the current routing information; i) if the return result from the external number portability database includes the current routing information, forwarding the incoming call and the current routing information to the second switching center, wherein the current routing information associates the directory number with the second switching center; j) storing the current routing information and time information when the associated number

portability query was performed in the local number portability data storage device in relation to the directory number, also taught by Slutsman, the second switching center is a *mobile switching center*, as taught by Maupin, in order to reduce the number of queries performed to the centralized database to reroute incoming signals to the current PLMN or PSTN serving a ported telecommunications terminal.

Slutsman and Maupin teach everything as stated above and Slutsman also teaches the cache entry is designated as a valid entry and is considered as such for some set period of time (column 6, lines 64-65). However, neither Slutsman nor Maupin specifically teach the time information associated with a *date* and time. The Examiner contends this feature was old and well known in the art at the time of invention as taught by Ashdown.

Ashdown also teaches the time information associated with a *date* and time (column 7, lines 13-15).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the method, taught by Slutsman, Maupin, and Ashdown, querying an external number portability database [and all steps above as stated above], also taught by Slutsman, the second switching center is a *mobile* switching center, as taught by Maupin, the time information associated with a *date* and time, as taught by Ashdown, in order to minimized the number of number portability queries in a telecommunications system.

As to **claim 4**, Slutsman, Maupin, and Ashdown teach everything as applied in claim 1 and Slutsman also teaches:

> j) receiving a return result from the external number portability database (column 6, lines 48-49);

> k) determining if the return result from the external number portability database includes the current routing information (column 6, lines 50-55);

l) if the return result from the external number portability database includes the current routing information, forwarding the incoming call and the current routing information to the second switching center, wherein the current routing information associates the directory number with the second switching center (column 6, lines 56-58);

m) storing the current routing information and time information when the associated number portability query was performed in the local number portability data storage device in relation to the directory number (column 6, lines 62-64).

However, Slutsman fails to teach the first and second switching centers are *mobile* switching centers and f) if the return result from the local number portability data storage device does not include the stored routing information, querying a home location register associated with the first mobile switching center for location information associated with the mobile station; g) receiving a return result from the home location register; h) determining if the return result from the home location register includes the location information; i) if the return result from the home location register does not include the location information, querying an external number portability database for current routing information associated with the directory number. The Examiner contends this feature was old and well known in the art as taught by Maupin.

Maupin also teaches:

f) if the return result from the local number portability data storage device does not include the stored routing information, querying a home location register associated with the first mobile switching center for location information associated with the mobile station; (column 8, lines 33-38)

g) receiving a return result from the home location register; (column 8, lines 41-45)

h) determining if the return result from the home location register includes the location information; (column 8, lines 41-45)

i) if the return result from the home location register does not include the location

information, querying an external number portability database for current routing information

associated with the directory number (column 8, lines 45-54).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of

invention to require the method, taught by Slutsman, Maupin, and Ashdown, j) receiving a return

result from the external number portability database; k) determining if the return result from the

external number portability database includes the current routing information; l) if the return

result from the external number portability database includes the current routing information,

forwarding the incoming call and the current routing information to the second switching center,

wherein the current routing information associates the directory number with the second

switching center; m) storing the current routing information and time information when the

associated number portability query was performed in the local number portability data storage

device in relation to the directory number, as taught by Slutsman, f) if the return result from the

local number portability data storage device does not include the stored routing information,

querying a home location register associated with the first mobile switching center for location

information associated with the mobile station; g) receiving a return result from the home

location register; h) determining if the return result from the home location register includes the

location information; i) if the return result from the home location register does not include the

location information, querying an external number portability database for current routing

information associated with the directory number, as taught by Maupin, in order to reduce the

number of queries performed to the centralized database to reroute incoming signals to the

current PLMN or PSTN serving a ported telecommunications terminal.

As to **claim 6**, Slutsman, Maupin, and Ashdown teach everything as applied in claim 1

and Slutsman further teaches:

f) if the return result from the local number portability data storage device does not include the stored routing information, querying an external number portability database for current routing information associated with the directory number (column 6, lines 45-48);

g) receiving a return result from the external number portability database (column 6, lines 48-49);

h) determining if the return result from the external number portability database includes the current routing information (column 6, lines 50-55);

i) if the return result from the external number portability database includes the current routing information, forwarding the incoming call and the current routing information to the second switching center, wherein the current routing information associates the directory number with the second switching center (column 6, lines 56-58);

j) storing the current routing information and time information when the associated number portability query was performed in the local number portability data storage device in relation to the directory number (column 6, lines 62-64).

However, Slutsman fails to teach the second switching center is a *mobile* switching center. The Examiner contends this feature was old and well known in the art at the time of invention as taught by Maupin.

Maupin also teaches the second switching center is a *mobile* switching center (column 8, lines 62-64).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the method, taught by Slutsman, Maupin, and Ashdown, f) if the return result from the local number portability data storage device does not include the stored routing information, querying an external number portability database for current routing information

associated with the directory number; g) receiving a return result from the external number

portability database; h) determining if the return result from the external number portability

database includes the current routing information; i) if the return result from the external number

portability database includes the current routing information, forwarding the incoming call and

the current routing information to the second switching center, wherein the current routing

information associates the directory number with the second switching center; j) storing the

current routing information and time information when the associated number portability query

was performed in the local number portability data storage device in relation to the directory

number, also taught by Slutsman, the second switching center is a *mobile switching center*, as

taught by Maupin, in order to reduce the number of queries performed to the centralized

database to reroute incoming signals to the current PLMN or PSTN serving a ported

telecommunications terminal.

Slutsman and Maupin teach everything as stated above and Slutsman also teaches the

cache entry is designated as a valid entry and is considered as such for some set period of time

(column 6, lines 64-65). However, neither Slutsman nor Maupin specifically teach the time

information associated with a *date* and time. The Examiner contends this feature was old and

well known in the art at the time of invention as taught by Ashdown.

Ashdown also teaches the time information associated with a *date* and time (column 7,

lines 13-15).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of

invention to require the method, taught by Slutsman, Maupin, and Ashdown, querying an

external number portability database [and all steps above as stated above], also taught by

Slutsman, the second switching center is a *mobile* switching center, as taught by Maupin, the

time information associated with a *date* and time, as taught by Ashdown, in order to minimized the number of number portability queries in a telecommunications system.

As to **claim 8**, Slutsman, Maupin, and Ashdown teach everything as applied in claim 1; however, Slutsman fails to teach f) querying a home location register associated with the first mobile switching center for location information associated with the mobile station; g) receiving a return result from the home location register; and h) determining if the return result from the home location register includes the location information, wherein the return result from the home location register does not include the location information. However, the Examiner contends this feature was old and well known in the art at the time of invention as taught by Maupin.

Maupin also teaches:

f) querying a home location register associated with the first mobile switching center for location information associated with the mobile station; (column 8, lines 33-38)

g) receiving a return result from the home location register; (column 8, lines 41-45)

h) determining if the return result from the home location register includes the location information; (column 8, lines 41-45)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the method, taught by Slutsman, Maupin, and Ashdown, f) querying a home location register associated with the first mobile switching center for location information associated with the mobile station; g) receiving a return result from the home location register; and h) determining if the return result from the home location register includes the location information, wherein the return result from the home location register does not include the location information, as taught by Maupin, in order to reduce the number of queries performed to the centralized database to reroute incoming signals to the current PLMN or PSTN serving a ported telecommunications terminal.

As to **claim 18**, Slutsman, Maupin, and Ashdown teach everything as applied in claim 1 and Slutsman also teaches i) a timestamp reflecting an approximate date and time when the previous number portability query that retuned the stored routing information for the directory number was performed, ii) a timestamp reflecting a date and time after which the stored routing information is considered expired by the first mobile switching center, and iii) a value reflecting an amount of time until the first mobile switching center considers the stored routing information expired (column 6, lines 64-65).

As to **claim 26**, Slutsman teaches a method for improving call processing in a number portability environment (column 1, lines 15-16). Slutsman also teaches being processed a called party B was served by end office 160 of local service provider 2 and has been ported by the end office 150 of local service provider 3 (column 5, lines 56-58). Slutsman also teaches the calling party A, being serviced by its local service provider can call the (ported) called party B with LRN response information being available to the end office of the LSP 1 (column 5, lines 64-67), reading on claimed "a telecommunication system for relating a directory number to a station for an incoming call from a calling party using a calling party device to a called party using the station."

Slutsman also teaches a cache, reading on claimed "local number portability storage device," is associated with the switching office which is responsible for launching queries to a number portability database (column 4, lines 9-11). Slutsman also teaches the end office 110 receives the number and detects that 212-984 is a portable NPA-NXX and the end office also checks cache 100 to determine whether it contains location routing number response information corresponding to the dialed number (column 6, lines 2-3, lines 7-10), reading on claimed "a first switching center associated with the directory number; a local number portability data storage device in communication with the first switching center." Slutsman also teaches the

end office may not detect any valid information in the cache relating to the dialed number: the

term "valid information" is used to indicate that information within the cache may be deemed to

be unreliable after some specified period of time (column 6, lines 35-40), reading on claimed

"means for querying a local number portability data storage device for stored routing information

associated with the directory number and time information when a previous number portability

query associated with the directory number returned the stored routing information."

Slutsman also teaches a cache memory is provided in association with the end office

100 and is checked to determine if call routing can be done before receiving the LRN response

information from the NP database (column 6, lines 24-27), reading on claimed "means for

receiving a return result from the local number portability data storage device; means for

determining if the return result from the local number portability data storage device includes the

stored routing information."

Slutsman also teaches even if response information exists in the cache for a particular

called number, those entries may have been in the cache for such a period of time that

statistically they are no longer reliable and are therefore treated as invalid pieces of information

(column 6, lines 39-43), reading on claimed "means for determining if the stored routing

information is expired by determining if the time information exceeds a first predetermined time

threshold."

Slutsman also teaches the cache does include the LRN response information including

the LRN of 212-484-9999 (column 6, lines 10-11). Stutsman also teaches the end office then

routes the call via tandem switch 120 to the end office 150, reading on claimed "a second

switching center in operative communication with the first switching center and associated with

service to the station," of LSP 3 identified by the LRN from the cache and the LSP 3 end office

then recognizes its own LRN in the CdPN parameter, obtains the dialed number from the

generic address parameter, and completes the call to station B (column 6, lines 17-22), reading on claimed "means for forwarding the incoming call and the stored routing information to the second switching center if the return result from the local number portability data storage device includes the stored routing information and if the stored routing information is not expired, wherein the stored routing information associates the directory number with the second switching center".

However, Slutsman fails to teach the station is a *mobile station*, the network is a *wireless network*, the first switching center is a *mobile switching center*, and the second switching center is a *mobile switching center* and the service is a *wireless* service. The Examiner contends this feature was old and well known in the art at the time of invention as taught by Maupin.

In an analogous art, Maupin teaches a telecommunications network relating to the rerouting of incoming calls to a ported telecommunications terminal within a telecommunications network (column 1, lines 16-18). Maupin also teaches where a mobile station 120 associated with a first home location register (HLR) 130 within a first Public Land Mobile Network (PLMN) 140 is shown relocating or porting to a second HLR 150 within a second PLMN 160 (inter-PLMN number portability 170) (column 4, lines 49-53). Maupin also teaches calling party subscriber terminal 30 (e.g., wireline subscriber terminal and mobile station) requests a call connection towards the called party mobile station 120 that has been ported from the donor HLR 130 to the gaining HLR 150 (column 8, lines 17-20). Maupin also teaches the received incoming call connection is routed to the donor GMSC 180 associated with the donor HLR 130 (signal and call connection 210) (column 8, lines 26-28). Maupin also teaches the donor GMSC 180, in turn, determines that the mobile station associated with the received MSISDN number has been ported (column 8, lines 33-35). Maupin also teaches the donor HLR 130 then determines that the MSISDN number is no longer registered and returns a signal 310 informing the donor

GMSC 180 that no routing instruction is available and that the mobile station 120 has been

ported (column 8, lines 41-45). Maupin also teaches the N-1 switch 100 reroutes the call

connection to the gaining GMSC 200 utilizing the received network address as the new CdPn

(column 8, lines 62-64). Maupin also teaches the gaining GMSC 200 determines the gaining

HLR currently serving the ported mobile station 120 by further analyzing the received network

address (column 9, lines 1-4). Maupin also teaches the gaining HLR 150 then forwards the

received roaming number to the gaining GMSC 200 via signal 330 and utilizing the received

roaming number as the destination address, the gaining GMSC 200 reroutes the received

incoming call connection to the serving MSC 340 (column 9, lines 15-21), all of the above

reading on claimed "the stations is a *mobile station*, the network is a *wireless network*, the first

switching center is a *mobile switching center*, and the second switching center is a *mobile

switching center* and the service is a *wireless* service."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of

invention to require the system, the first switching center, the second switching center, the

station, and the service, all taught by Slutsman, the station is a *mobile station*, the network is a

wireless network, the first switching center is a *mobile switching center*, and the second

switching center is a *mobile switching center*, as taught by Maupin, in order to reduce the

number of queries performed to the centralized database to reroute incoming signals to the

current PLMN or PSTN serving a ported telecommunications terminal.

Slutsman also teaches entries may have been in the cache for such a period of time that

statistically they are no longer reliable and are therefore treated as invalid pieces of information

(column 6, lines 41-43). However, neither Slutsman nor Maupin teach the time information is

associated with a *date* and time. The Examiner contends this feature was old and well known in

the art at the time of invention as taught by Ashdown.

In an analogous art, Ashdown teaches a system and method for intelligently caching

Local Number Portability queries from a Public Switched Telephone Network (PSTN) (column 3,

lines 50-52). Ashdown also teaches a Local Number Portability Cache (LNPC) system. The

LNPC 160 resides within the ICP 170, which is installed between the service provider SSP 130

and the network 100 (column 4, lines 34-37). Ashdown also teaches each entry stored in the

local database 406 has an associated time stamp and the time stamp is continually examined

against a pre-defined expiration period (column 7, lines 13-15), reading on claimed "the time

information is associated with a *date and time.*"

Therefore, it would have been obvious to one of ordinary skill in the art at the time of

invention to require the system, the first switching center, the second switching center, the

station, and the service, all taught by Slutsman, the station is a *mobile station*, the network is a

wireless network, the first switching center is a *mobile switching center*, and the second

switching center is a *mobile switching center*, as taught by Maupin, the time information is

associated with a *date and time*, as taught by Ashdown, in order to minimized the number of

number portability queries in a telecommunications system.

As to **claim 27**, Slutsman, Maupin, and Ashdown teach everything as applied in claim 26

above and Slutsman also teaches:

a number portability database (140) in communication with the first switching center

(column 6, lines 1-10); and

the first switching center further including:

means for querying the number portability database for current routing

information associated with the directory number if the stored routing information is

expired (column 6, lines 45-48);

means for receiving a return result from the number portability database (column 6, lines 48-49);

means for determining if the return result from the number portability database includes the current routing information (column 6, lines 50-55);

means for forwarding the incoming call and the current routing information to the second switching center if the return result from the number portability database includes the current routing information, wherein the current routing information associates the directory number with the second switching center (column 6, lines 56-58); and

means for storing the current routing information and time information when the associated number portability query was performed in the local number portability data storage device in relation to the directory number (column 6, lines 62-64).

However, Slutsman fails to teach the first and second switching center are *mobile* switching centers. The Examiner contends this feature was old and well known in the art at the time of invention as taught by Maupin.

Maupin also teaches the first and second switching center are *mobile* switching centers (column 8, lines 62-64).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the method, taught by Slutsman, Maupin, and Ashdown, a number portability database in communication with the first switching center; and the first switching center further including: means for querying the number portability database for current routing information associated with the directory number if the stored routing information is expired; means for receiving a return result from the number portability database; means for determining if the return result from the number portability database includes the current routing information; means for forwarding the incoming call and the current routing information to the second

switching center if the return result from the number portability database includes the current routing information, wherein the current routing information associates the directory number with the second switching center; and means for storing the current routing information and time information when the associated number portability query was performed in the local number portability data storage device in relation to the directory number, as taught by Slutsman, the first and second switching center are *mobile* switching centers, as taught by Maupin, in order to reduce the number of queries performed to the centralized database to reroute incoming signals to the current PLMN or PSTN serving a ported telecommunications terminal.

Slutsman also teaches entries may have been in the cache for such a period of time that statistically they are no longer reliable and are therefore treated as invalid pieces of information (column 6, lines 41-43). However, neither Slutsman nor Maupin teach the time information is associated with a *date* and time. The Examiner contends this feature was old and well known in the art at the time of invention as taught by Ashdown.

In an analogous art, Ashdown teaches a system and method for intelligently caching Local Number Portability queries from a Public Switched Telephone Network (PSTN) (column 3, lines 50-52). Ashdown also teaches a Local Number Portability Cache (LNPC) system. The LNPC 160 resides within the ICP 170, which is installed between the service provider SSP 130 and the network 100 (column 4, lines 34-37). Ashdown also teaches each entry stored in the local database 406 has an associated time stamp and the time stamp is continually examined against a pre-defined expiration period (column 7, lines 13-15), reading on claimed "the time information is associated with a *date and time.*"

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the system, the first switching center, the second switching center, and the station, all taught by Slutsman, the station is a *mobile station*, the network is a *wireless network*,

the first switching center is a *mobile switching center*, and the second switching center is a

mobile switching center, as taught by Maupin, the time information is associated with a *date and*

time, as taught by Ashdown, in order to minimized the number of number portability queries in a

telecommunications system.

As to **claim 28**, Slutsman, Maupin, and Ashdown teach everything as applied in claim 26

and Slutsman also teaches:

the first switching center further including:

means for receiving a return result from the number portability database (column 6, lines

48-49);

means for determining if the return result from the number portability database includes

the current routing information (column 6, lines 50-55);

means for forwarding the incoming call and the current routing information to the second

switching center if the return result from the number portability database includes the

current routing information, wherein the current routing information associates the

directory number with the second switching center (column 6, lines 56-58);

means for storing the current routing information and time information associated when

the associated number portability query was performed in the local number portability

data storage device in relation to the directory number (column 6, lines 62-64).

Slutsman also teaches:

a number portability database (140) in communication with the first switching center

(column 6, lines 1-10);

However, Slutsman fails to teach the first mobile switching center further including:

means for querying the home location register associated with the first switching center for

location information associated with the mobile station if the return result from the local number

portability data storage device does not include the stored routing information; means for

receiving a return result from the home location register; means for determining if the return

result from the home location register includes the location information; means for querying the

number portability database for current routing information associated with the directory number

if the return result from the home location register does not include the location information. The

Examiner contends this feature was old and well known in the art as taught by Maupin.

Maupin also teaches:

a home location register (130) in communication with the first mobile switching center

(column 8, lines 17-21);

the first mobile switching center further including:

means for querying the home location register associated with the first switching center

for location information associated with the mobile station if the return result from the local

number portability data storage device does not include the stored routing information (column

8, lines 33-38);

means for receiving a return result from the home location register (column 8, lines 41-

45);

means for determining if the return result from the home location register includes the

location information (column 8, lines 41-45);

means for querying the number portability database for current routing information

associated with the directory number if the return result from the home location register does not

include the location information (column 8, lines 45-54).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of

invention to require the system, taught by Slutsman, Maupin, and Ashdown, the first switching

center further including: means for receiving a return result from the number portability

database; means for determining if the return result from the number portability database

includes the current routing information; means for forwarding the incoming call and the current

routing information to the second switching center if the return result from the number portability

database includes the current routing information, wherein the current routing information

associates the directory number with the second switching center; means for storing the current

routing information and time information associated when the associated number portability

query was performed in the local number portability data storage device in relation to the

directory number, a number portability database in communication with the first switching

center, as taught by Slutsman, the first mobile switching center further including: means for

querying the home location register associated with the first switching center for location

information associated with the mobile station if the return result from the local number

portability data storage device does not include the stored routing information; means for

receiving a return result from the home location register; means for determining if the return

result from the home location register includes the location information; means for querying the

number portability database for current routing information associated with the directory number

if the return result from the home location register does not include the location information, as

taught by Maupin, in order to reduce the number of queries performed to the centralized

database to reroute incoming signals to the current PLMN or PSTN serving a ported

telecommunications terminal.

Slutsman and Maupin teach everything as stated above and Slutsman also teaches the

cache entry is designated as a valid entry and is considered as such for some set period of time

(column 6, lines 64-65). However, neither Slutsman nor Maupin specifically teach the time

information associated with a *date* and time. The Examiner contends this feature was old and

well known in the art at the time of invention as taught by Ashdown.

Ashdown also teaches the time information associated with a *date* and time (column 7, lines 13-15).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the system, taught by Slutsman, Maupin, and Ashdown, querying an external number portability database [and all steps above as stated above], also taught by Slutsman, the home location register and all steps above as stated above, as taught by Maupin, the time information associated with a *date* and time, as taught by Ashdown, in order to minimized the number of number portability queries in a telecommunications system.

As to **claim 29**, Slutsman, Maupin, and Ashdown teach everything as applied in claim 26 and Slutsman also teaches:

a number portability database (140) in communication with the first switching center (column 6, lines 1-10); and

the first switching center further including:

means for querying the number portability database for current routing information associated with the directory number if the return result from the local number portability data storage device does not include the stored routing information (column 6, lines 45-48);

means for receiving a return result from the number portability database; means for determining if the return result from the number portability database includes the current routing information; means for forwarding the incoming call and the current routing information to the second switching center if the return result from the number portability database includes the current routing information, wherein the current routing information associates the directory number with the second switching center (column 6, lines 48-55, lines 56-58); and

means for storing the current routing information and time information when the associated number portability query was performed in the local number portability data storage device in relation to the directory number (column 6, lines 62-64).

However, Slutsman fails to teach the second switching center is a *mobile* switching center. The Examiner contends this feature was old and well known in the art at the time of invention as taught by Maupin.

Maupin also teaches the second switching center is a *mobile* switching center (column 8, lines 62-64).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the system, taught by Slutsman, Maupin, and Ashdown, a number portability database in communication with the first switching center; and the first switching center further including: means for querying the number portability database for current routing information associated with the directory number if the return result from the local number portability data storage device does not include the stored routing information; means for receiving a return result from the number portability database; means for determining if the return result from the number portability database includes the current routing information; means for forwarding the incoming call and the current routing information to the second switching center if the return result from the number portability database includes the current routing information, wherein the current routing information associates the directory number with the second switching center; and means for storing the current routing information and time information when the associated number portability query was performed in the local number portability data storage device in relation to the directory number, as taught by Slutsman, the second switching center is a *mobile* switching center, as taught by Maupin, in order to reduce the number of queries performed to

the centralized database to reroute incoming signals to the current PLMN or PSTN serving a

ported telecommunications terminal.

Slutsman also teaches entries may have been in the cache for such a period of time that

statistically they are no longer reliable and are therefore treated as invalid pieces of information

(column 6, lines 41-43). However, neither Slutsman nor Maupin teach the time information is

associated with a *date* and time. The Examiner contends this feature was old and well known in

the art at the time of invention as taught by Ashdown.

In an analogous art, Ashdown teaches a system and method for intelligently caching

Local Number Portability queries from a Public Switched Telephone Network (PSTN) (column 3,

lines 50-52). Ashdown also teaches a Local Number Portability Cache (LNPC) system. The

LNPC 160 resides within the ICP 170, which is installed between the service provider SSP 130

and the network 100 (column 4, lines 34-37). Ashdown also teaches each entry stored in the

local database 406 has an associated time stamp and the time stamp is continually examined

against a pre-defined expiration period (column 7, lines 13-15), reading on claimed "the time

information is associated with a *date and time*."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of

invention to require the system, taught by Slutsman, Maupin, and Ashdown, a number portability

database and first switching centers mean(s) [as stated above], also taught by Slutsman, the

second switching center is a *mobile* switching center, as taught by Maupin, the time information

associated with a *date* and time, as taught by Ashdown, in order to minimized the number of

number portability queries in a telecommunications system.

As to **claim 30**, Slutsman, Maupin, and Ashdown teach everything as applied in claim

26; however, Slutsman fails to teach a home location register in communication with the first

mobile switching center; and the first mobile switching center further including: means for

querying the home location register associated with the first mobile switching center for location

information associated with the mobile station; means for receiving a return result from the

home location register; and means for determining if the return result from the home location

register includes the location information, wherein the return result from the home location

register does not include the location information. However, the Examiner contends this feature

was old and well known in the art at the time of invention as taught by Maupin.

Maupin also teaches:

a home location register (130) in communication with the first mobile switching center

(column 8, lines 17-21);

the first mobile switching center further including:

means for querying the home location register associated with the first switching center

for location information associated with the mobile station if the return result from the local

number portability data storage device does not include the stored routing information (column

8, lines 33-38);

means for receiving a return result from the home location register (column 8, lines 41-

45);

means for determining if the return result from the home location register includes the

location information (column 8, lines 41-45);

means for querying the number portability database for current routing information

associated with the directory number if the return result from the home location register does not

include the location information (column 8, lines 45-54).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of

invention to require the system, taught by Slutsman, Maupin, and Ashdown, a home location

register in communication with the first mobile switching center; and the first mobile switching

center further including: means for querying the home location register associated with the first mobile switching center for location information associated with the mobile station; means for receiving a return result from the home location register; and means for determining if the return result from the home location register includes the location information, wherein the return result from the home location register does not include the location information, as taught by Maupin, in order to reduce the number of queries performed to the centralized database to reroute incoming signals to the current PLMN or PSTN serving a ported telecommunications terminal.

Allowable Subject Matter

3.   Claims 9-17 and 31-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4.   Claims 19-25 are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olivia Marsh whose telephone number is 571-272-7912. The examiner can normally be reached on 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on 571-272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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